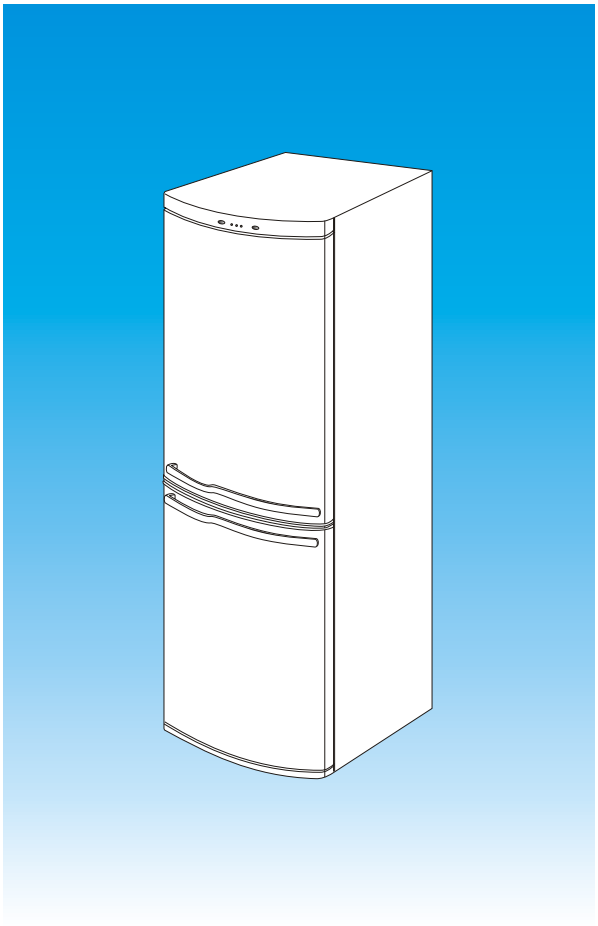
SAMSUNG

# MODEL:
# RL-26MBSW
# RL-26MBSI

# SERVICE MANUAL

## REFRIGERATOR



## CONTENTS


1. PRECAUTION.....1

2. PRODUCT SPECIFICATION.....2

3. STRUCTURE.....3

4. CIRCULATION OF REFRIGERANT.....5

5. SCHEMATIC- DIAGRAM.....6

6. SPECIFICATIONS OF MAJOR FUNCTIONAL PARTS.....7

7. OPERATING PRINCIPLE OF MAJOR COMPONENTS AND INSPECTION METHOD.....8

8. HOW TO REPLACE MAJOR COMPONENTS.....11

9. TROUBLE -SHOOTING.....13

10. EXPLODED VIEW AND PARTS LIST.....14

# 1.PRECAUTION

## 1-1. Safety precautions

Only qualified service technicians who are thoroughly familiar with the refrigerating cycle and the required safety checks should perform service operations in accordance with specified guidelines.

1 -1-1. Prior to servicing, be sure to disconnect the product from its electrical power source by removing the products eletrical plug from the wall receptacle to preclude the possibility of resultant presonal injury and / or property damage.

1-1-2. Never attempt to modify or bypass circuit connections in ways not recommended by the manufacturer.

1-1-3. Do not use any extension or double adaptors.

1-1-4. For person safety, this appliance must be properly grounded.
This refrigerator should not be grounded with a telephone line, gas pipe etc.

## 1-2. Servicing precautions

1 -2-1. In case of article No.1 and starting capacitor ( itself only ) do not supply power in order to check for eletrical charge and discharge for more than two minutes. When power is supplied for more than two minutes, the insulation inside the capacitor may be broken. When it is impossible to finish the test within two minutes, wait for about 30 minutes, and then check again.

1-2-2. When replacing the relay connected to the compressor terminal pin, be sure to pull it off straight and push it on straight, Swaying of the relay side-to-side or up and down, may cause damage to the compressor terminal pin and / or the relay.

1-2-3. Wait more than 5 minutes to re-start the refrigerator after you stop it once.
If you plug in the refrigerator immediately after you pull the plug, you may not be able to start it again.

⚠ : This is safety-related information on the A/ C power circuits and parts used in the refrigerator.

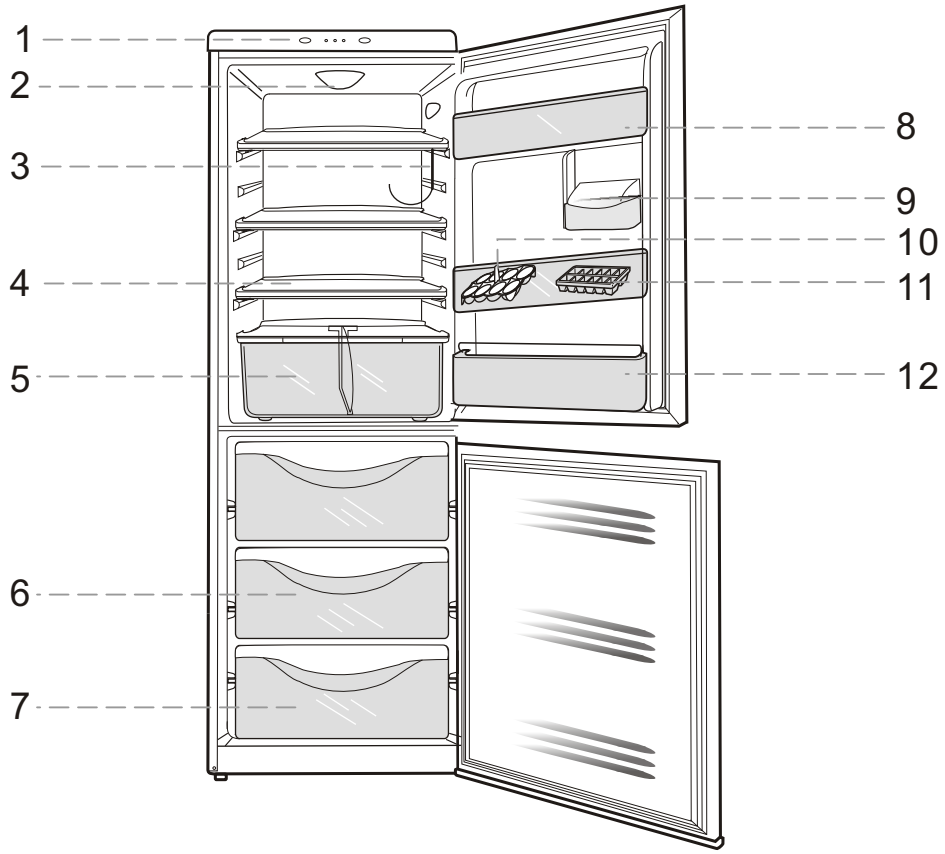
☞ : This is the information required for repairing the refrigerator.

# 2.PRODUCT SPECIFICATION

| | | |
|---|---|---|
| Model | | RL26MBSW RL26MBSI |
| Type | | Two door refrigerator & freezer |
| Power supply | | AC 220V~50Hz |
| Capacity | Total | 232L |
| | Refrigerator | 177L |
| Overall dimensions (mm) | Width | 550 |
| | Depth | 664 |
| | Height | 1689 |
| Refrigerant(Sealed volume:g) | | HFC-134a(120g) |
| Temperature control | | Mechanical(Thermostat) |
| Insulation material | | Polyurethane Foam(141b) |
| Door Seal | | Magnetic gasket |
| Liner | | ABS |
| Acces–sories | Door Storage(Option) | 1Guard-Bottle,1 Guard Variety,2Guard-Egg,1Tray Ice,1Tray Egg |
| | FreezerStorage | 2 Assy Tray Upp,1 Assy Tray Low |
| | Ref Storage | 3 Assy Shelves,1 Assy Tray Veg |
| | Printed Matter | Owner's Manual,Label |

# 3.STRUCTURE

## 3-1.DESCRIPTION OF COMPONENTS




**1. TOP TABLE & PANEL PCB**

**2. ASSY LAMP**

**3. GUARD WINE**

**4. ASSY SHELF**

**5. CASE VEGETABLE**

**6. ASSY TRAY UPP**

**7. ASSY TRAY LOW**

**8. GUARD EGG**

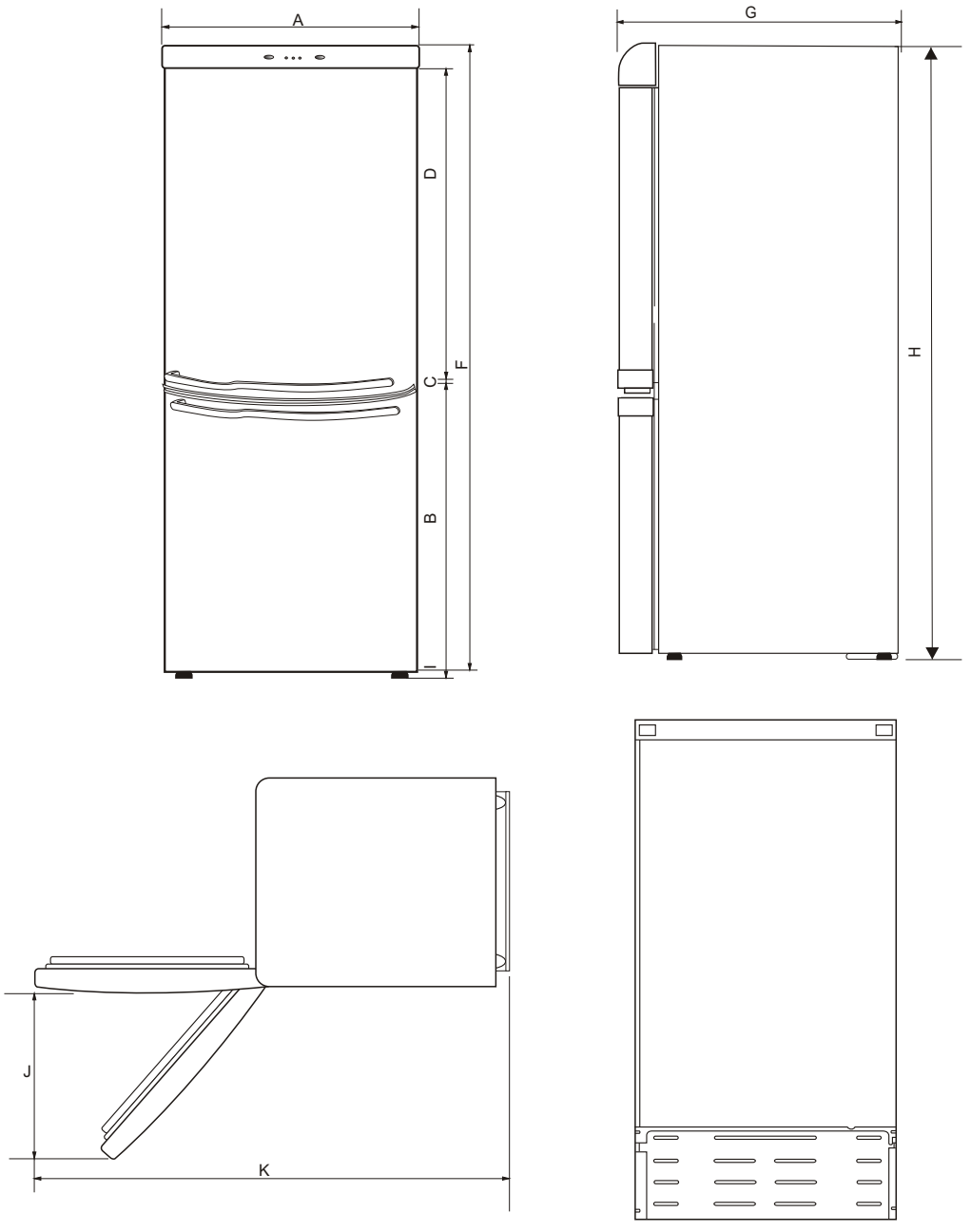
**9. GUARD VARIETY**

**10. TRAY EGG**

**11.TRAY ICE**

**12. GUARD BOTTLE**

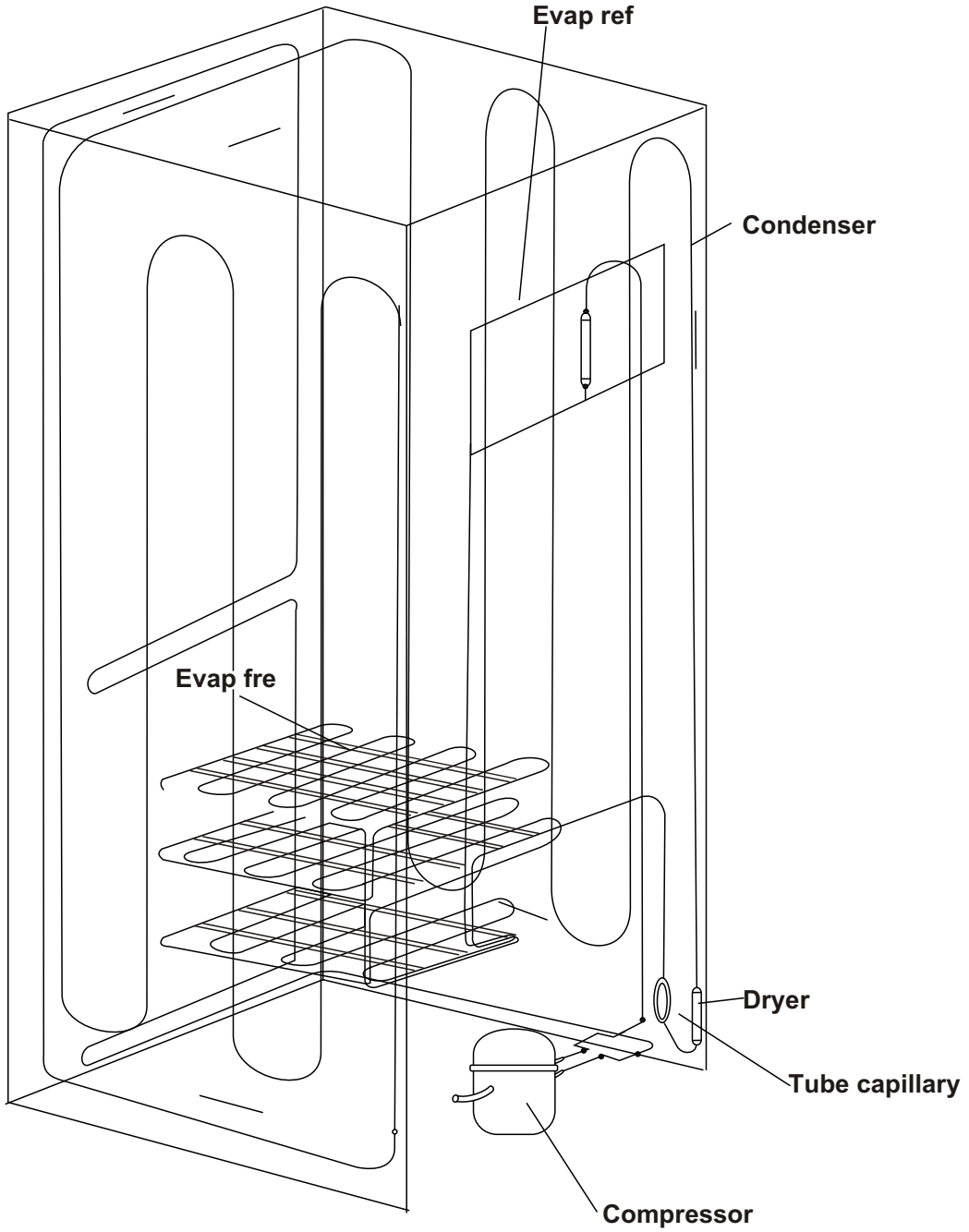
## *3-2.PRODUCT INSTALLATION*




| MODEL | A | B | C | D | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|
| RL64MBSW | 550 | 632 | 9 | 957.5 | 1650 | 664 | 1689 | 39 | 392 | 1094.76 |
| RL26MBSI | 550 | 632 | 9 | 957.5 | 1650 | 664 | 1689 | 39 | 392 | 1094.76 |

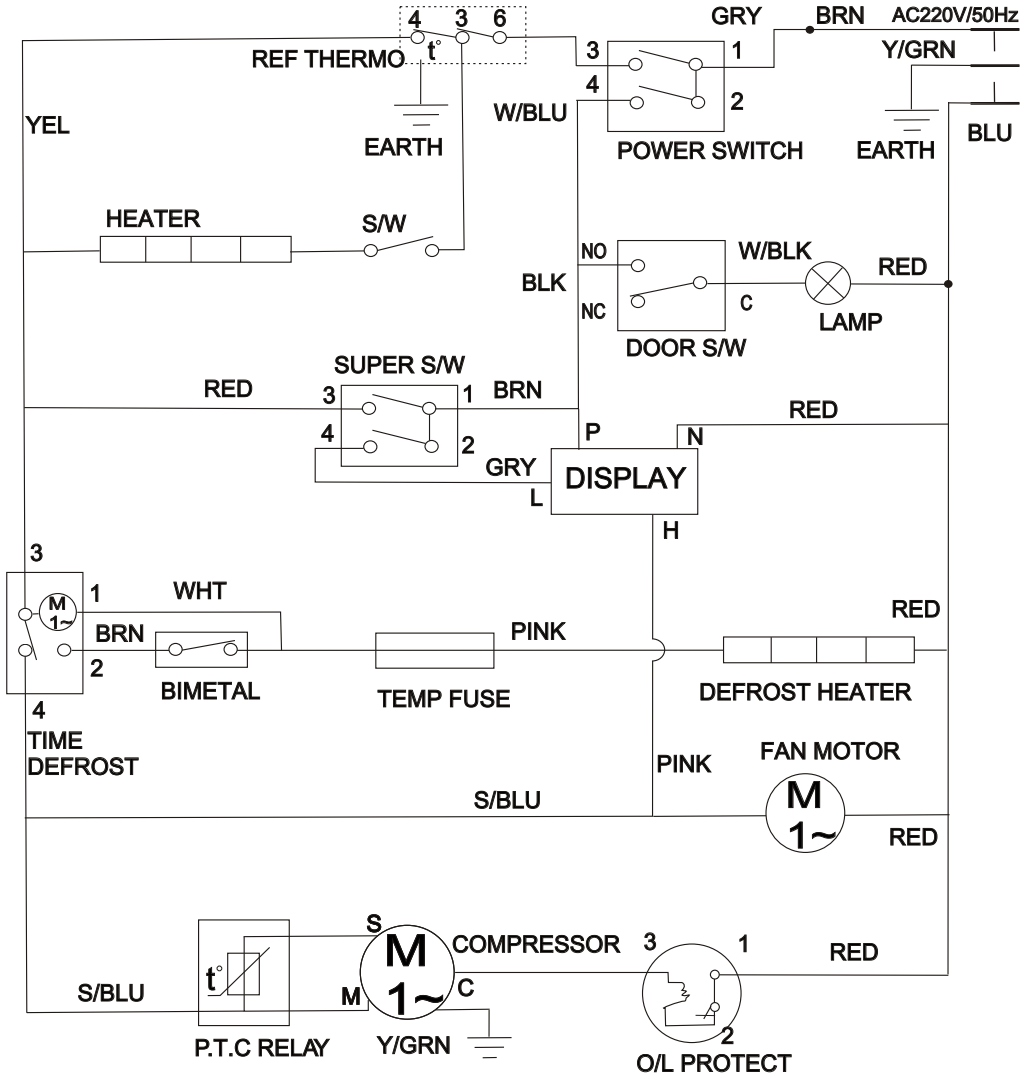
# 4.CIRCULATION OF REFRIGERANT

## 4-1.Circle of refrigerant



# 5.SCHEMATIC DIAGRAM

## 5-1.Circuit Diagram

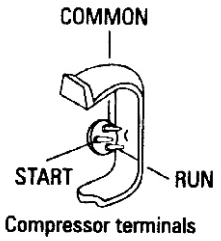
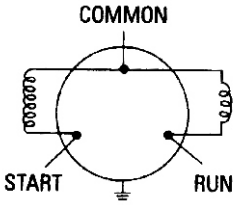
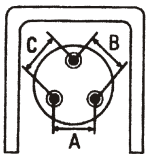
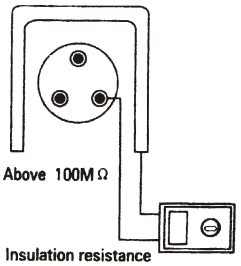


# 6.SPECIFICATIONS OF MAJOR FUNCTIONAL PARTS

| ITEM | SOURCE | | AC 220V~50Hz |
|---|---|---|---|
| REFRIGERATION CYCLE | COMPRESSOR | MODEL | QB66C |
| | | OUT PUT/STARTING TYPE | 165W/RSIR |
| | EVAPORATOR | | FIN TYPE |
| | CONDENSER | | CLUSTER |
| | DRYER | | MOLECULAR SLEVE |
| | CAPILLARY TUBE | | Ø1.8*0.62*3500 |
| | REFRIGERANT(g) | | R-134a 120g |
| ELECTRICAL PARTS | THERMOSTAT | | WDF29 |
| | POSISTOR | | 8EA503 |
| | OVERLOAD P ROTECTOR | MODEL | MM3-23GC |
| | | CLOSE TEMP/OPEN TEMP | 61±8℃/120±5℃ |

# 7.OPERATING PRINCIPLE OF MAJOR COMPONENTS, AND INSPECTION METHOD

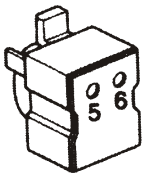
## 7-1.Compressor Motor

| Operating principle | Inspection method |
|---|---|
| The compressor motor, mounted directly to the compressor and located inside a sealed steel case, has two windings.<br>One is a start winding and the other a run winding. The windings are connected together internally, forming a common connection. A lead is connected to each of the windings, and to the common connection. These three leads are then connected to glass-sealed terminals that extend through the compressor case.<br>The terminals are clustered in al trangle ( pyramid ) pattern and, reading from left to right, are identified: Start, Common and Run.<br>  <br>Compressor terminals<br>  <br>Compressor Windings | 1) Measure the resistance of each winding of the compressor.<br>a. Disconnect the power cord.<br>b. Remove the relay from the compressor.<br>C. Measure the resistance of each winding.<br><br>A. The highest resistance value is the measurement of the "start" and "run" terminals whose windings are connected in series.<br><br>B. The lowest resistance value is the measurement of the "run" and "common" terminals.<br><br>C. The mid-level resistance value is the measururement of the "start" and "common" terminals.<br>B + C = A<br>  <br><br>2) Measure each terminal and ground with the ohmmetor set to the highest range.<br>If a winding is found to be either open or shorted to ground, the compressor has failed.<br>  <br>Insulation resistance |

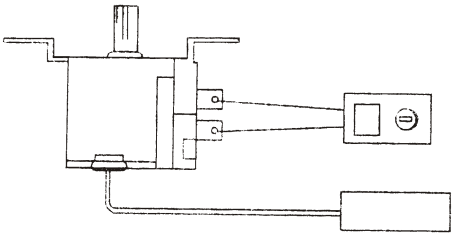
## 7-2 Overload Protector

| Operating principle | Inspection method |
|---|---|
| The overload protects the compressor motor by responding to both the temperature and current. The overload protector is basically made up of a set of the contacts normally closed and the bimetal element.<br><br>The overload, mounted externally and in direct contact with the compressor case, is connected in series with both windings of the motor.<br>If the motor fails to start for any reason, the heavy locked rotor current will cause the bimetal element to heat which then quickly flex, snapping the contacts open and interruption current flow through the motor.<br>Likewise, if the motor overheate to an unsefe leval, the comination of current and temperature will cause the bimetal to snap the contacts open, On cooling, the bimetal flex back and snaps the contacts closed. The motor will continue to cycle on the overload so long as the oriqinal reason for tripping persists | 1) Check for continuity with ohmmetor.<br>- If the overlosd is tripped, cheak continuity after waiting until it has cooled, in the room ambient before checking.<br>- Even though the continuity of the overload is observed it is difficult to confirm that the overload is operating within the specification limits.<br>If there is any doubt, replace it with a part with identical specifications.<br><br>⚠ : An overload should NEVER be by-passed in the circuit , not even as a temporary measure until the proper replacement can be installed. |

## *7-3.Relay*

| Operating principle | Inspection method |
|---|---|
| The relay momentarily energizes the start winding to start the rotation of the compressor motor.<br>Most later refrigerator models use a solid state type relay.<br>Unlike the mechanical type relay, the solid state relay has no coil and no moving contacts.<br>This relay consists of a small solid state wafer that has a low resistance at room temperature.<br>The wafer is positioned between electrical terminals that connect to the compressor terminals.<br><br>  <br><br><br>As voltage is initially applied to the compressor circuit, current flows through the run winding and, in parallel, through the relay and start winding . Initially , the resistance of the relay is low enough to pass sufficient current through the start winding and permit the compressor to start.<br>Then, instantaneously, the resistance of the relay goes high-in effect, reducing the current flow through the relay to a trickle . This trickle current causes the resistance of the relay to remain high , thus keeping the relay "open".<br>This type of relay is called a PTC(positive temperature coefficient) relay because the resistance goes high as the temperature increases.<br><br>The solid state relay can be tested for continuity, using an ohmmeter. The measured resistance of the relay, at room temperature, should be within 10% of the value stated on the schematic wiring diagram for the particular model. | |

## *7-4.Temperature Control*

| Operating principle | Inspection method |
|---|---|
| A temperature control is used on all refrigerators and freezers to regulate the operation of compressor and thus maintain desired food temperatures.<br>The temperature control consists primarily of a capillary and billows assembly , a set of normally closed contacts, and a mechanical linkage.<br>Pressure within the gas- charged capillary tube and billows assembly responds to temperature sensed at the sensing bulb.<br>Rising temperature causes the pressure to increase and expand the accordion-type billows.<br>The expanded billows actuates the linkage which allows contracts to close.<br>When the temperature drops , the billows contacts due to a decrease in pressure and the snap-action of the linkage opens the contacts. | Put the probe of the ohmmetor to the terminal of the temperature control, and check for the opening and closing of the contacts by turning the knob ON and OFF.<br>  |

# 8.HOW TO REPLACE MAJOR COMPONENTS

## 8-1. REFRIGERATION CYCLE

**COMPRESSOR:** In evaporator liquid refrigerant is so expanded to absorb heat around evaporator that compressor sucts refrigerant in low temperature and low pressure and then compresses it to gaseous refrigerant in high temperature and high pressure which will be discharged to outside.

**CONDENSER:** Gaseous refrigerant in high temperature and in high pressure so radiates evaporation latent heat absorbed from evaporator surrounding during passing through condenser and compression heat due to refrigerant gas compression to surrounding of condenser that refrigerant becomes liquid in high pressure.

**DRYER:** In order to prevent that moisture and foreign substances resided inside every parts during refrigeration cycle assembling is so included among refrigerant gas that it chokes the exit of inlet of capillary, dryer has drying substances (molecular sieves) and filter inside it which absorbs or purify them.

**Capillary tube:** Regulates and/or keeps(in specified low)refrigerant flow rate so that maintains constant pressure drop from wire condenser to evaporator.

**Evaporator:** Liquid referigerant passed through capillary so expand in evaporator that it becomes low temperature and low pressure to absorb heat around evaporator, so that it chills surrounding air and at that time liquid refrigerant becomes gaseous.

**HEAT EXCHANGE BETWEEN SUCTION TUBE AND CAPILLARY TUBE:**

Liquid refrigerant in high temperature passing through capillary tube so changes heat between low temperature on suction tube and then more lowers liquid refrigerant temperature at just before expansion so that increases its enthalpy to result big refrigeration efficiency at last.

Refrigerant gas in low temperature passing through suction tube so exchanges heat between liguid refrigerant high temperature passing through capillary that it becomes more hith temperature condition and then it becomes compete gaseous so that increase compression efficiency of compressor.

**THERMOSTAT:** Mounted inside the refrigerator to regulate the temperature of refrigerator.

**STARTING RELAY:** When motor starts running owing to sub winding interrupts of current simultaneously.

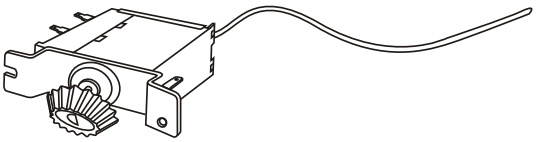
**OVERLOAD PROTECTOR:** When circuit is overheated, it is cut off to prevent compressor wind burn-out.

## *8-2. Steps for replacing thermostat,*

1) Take off the screws fastening the lamp box.

2) Take off the screws fixing the capillary tube.

3) Take off the thermostat.



## *8-3. Steps for replacing relay,*

1) Take off the cover of relay by removing the fastener.

2) Take off the relay by pulling it right hand.

## *8-4. Steps for replacing door panel,*

1) Remove the screws fastening the door panel.
   Then, door panel can replaced.

## *8-5. Steps for replacing compressor evaporator unit,*

1) The compressor and evaporator are not united in these models and cannot be taken off-together.
   Cut them into two units at joint with a weider or a cutter.
   Then, take them out separately.

# 9. TROUBLE - SHOOTING

## 9-1. Compressor does not run at all (Does not cool at all)

| Cause | What to be checked | Correction |
|---|---|---|
| Temperature control set to position "OFF" | Check control knob setting | Turn the control to "COLD"(MAX) position. |
| Erroneous plug cord inserting | Check plug cord inserting | Insert plug cord into outlet correctly. |
| Fault relay assembly. | Check conduction of overload relay. | Replace if overload relay is not conductive. |

## 9-2. Compressor does not run normally

| Cause | What to be checked | Correction |
|---|---|---|
| Source power voltage | Check power voltage is within ±10% of rating. | If voltage is below rated value, contact utility company. |
| Starting voltage | Check starting voltage. | If starting voltage drops below - 10% of rating, contact utility company and have household wiring capacity increased. |

## 9-3. Compressor runs normally but inside temprature does not drop at all.

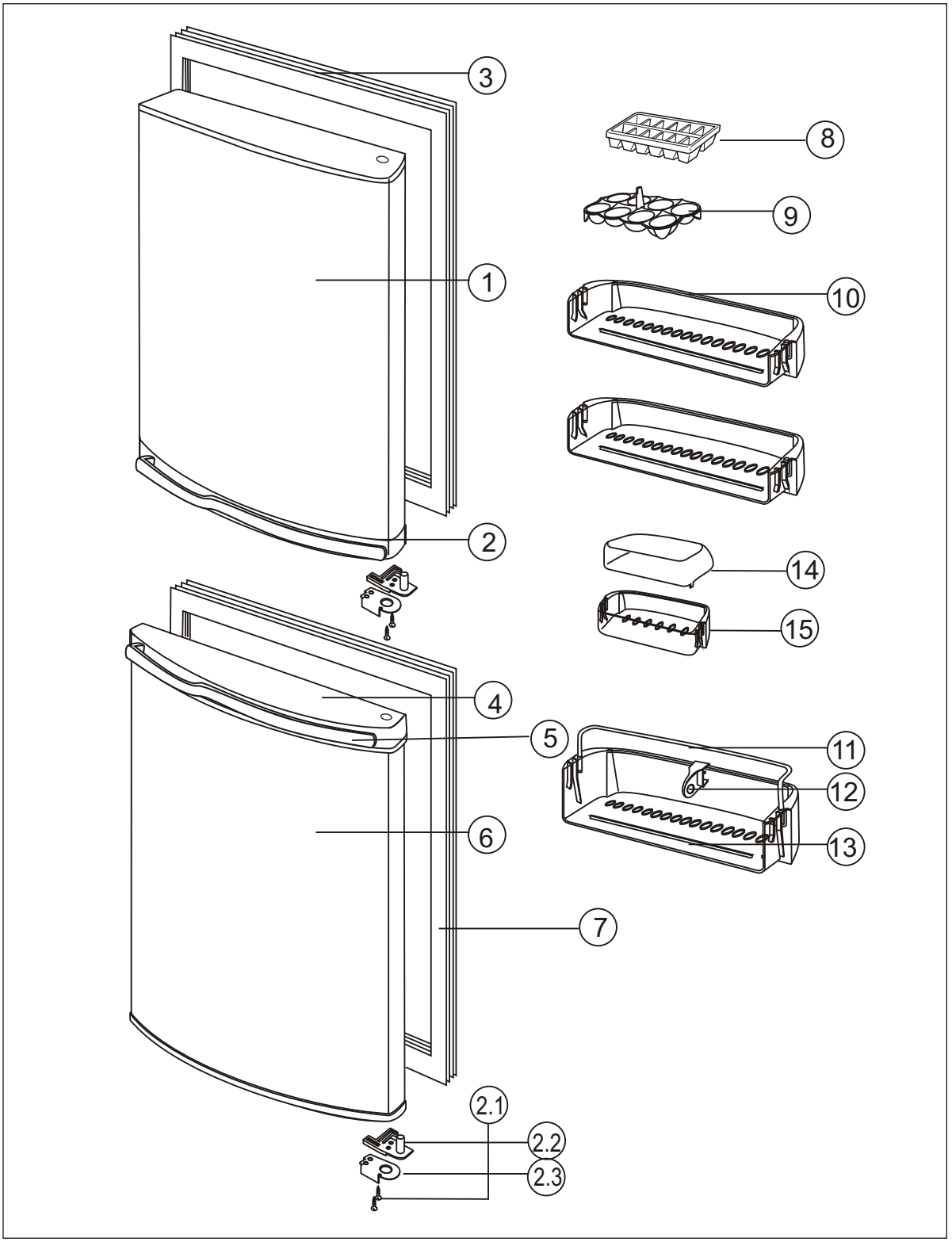
| Cause | What to be checked | Correction |
|---|---|---|
| Faulty compressor-evaporator unit. | After continuing operation for over 20minutes, let a drop of water fall onto evaporator and see if it becomes frozen. | Replace Compressor-evaporator unit. |

## 9-4. Compressor runs normally but inside temprature does not drop at a sufficiently low level.

| Cause | What to be checked | Correction |
|---|---|---|
| Erroneous temperature control setting. | Check control knob setting. | Set control to "COLD" and continue operation for over 20 minutes. If temperature fails to drop, do following. |
| Faulty thermostat | Short-circuit thermostat terminals and continue operation for over 20minutes . If temperature drops, thermostat is faulty. | Replace thermostat. (If thermostat is not faulty, compressor-evaporator unti is in trouble). |
| Gaps between door and cabinet. | Check for gaps between door packing and cabinet. | Loosen door panle screws and correct distortion of door. |
| Frosting on evaporator. | Check for excessive frosting on evaporator. ( This will deteriorate refrigerating efficiency ). | Defrost before frost grows more than 10mm thick. |

# 10.EXPLODED VIEW AND PARTS LIST

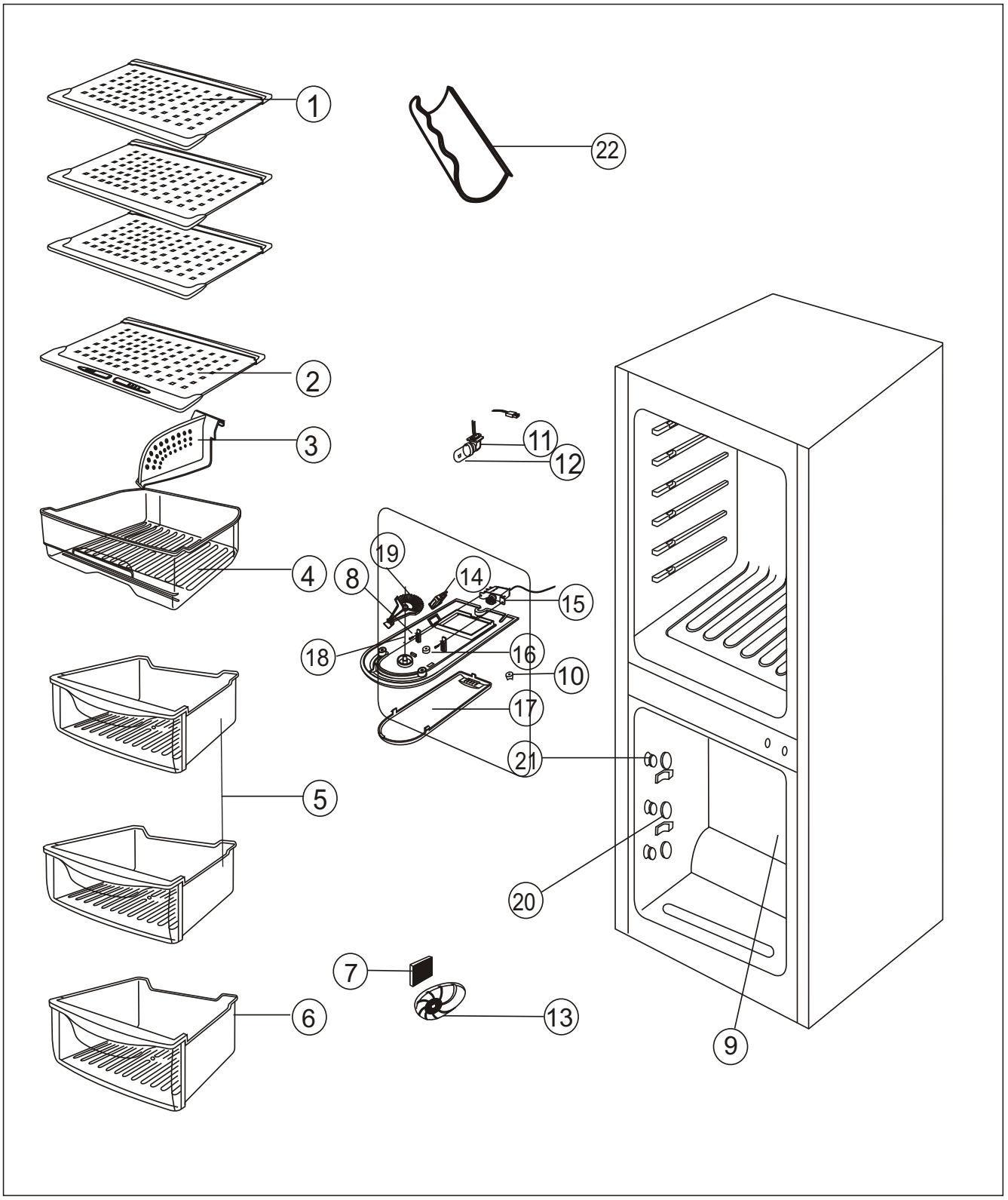
## 10-1.DOOR PARTS



## 10-2. PARTS LIST-DOOR

| No | Part number | Description | Q'ty | Spec | Remark |
|---|---|---|---|---|---|
| 1 | DA91-01726H | ASSY DOOR FOAM REF | 1 | RL26MBSW,SC-9752 | RL26MBSW |
| | DA91-01725E | ASSY DOOR FOAM FRE | 1 | RL26MBSI,SILVER, | RL26MBSI |
| 2 | DA97-00529E | ASSY CAP DOOR | 2 | RL24MBSW,ABS,-,-,-,SC | RL26MBSW |
| | DA97-00529B | ASSY CAP DOOR | 2 | BCD-191NS,ABS,-,-,-,G | RL26MBSI |
| 2.1 | 6002-001103 | SCREW-TAPPING | 4 | BH,+,GB845-85,M3.5,L1 | |
| 2.2 | DA61-00406A | STOPPER DOOR-A | 2 | BCD-182,POM,-,-,-,A2 | RL26MBSW |
| | DA61-00406E | STOPPER DOOR-A | 2 | BCD-191NS/202NS/211N | RL26MBSI |
| 2.3 | DA71-40133A | STOPPER-DOOR,C | 2 | SCP1,T2.0,ZPC3(W) | |
| 3 | DA63-00688A | GASKET DOOR REF,ASSY | 1 | 245N,500*861,S | RL26MBSW |
| | DA63-00688C | GASKET DOOR-REF | 1 | BCD-246NS/231WNS,SO | RL26MBSI |
| 4 | DA67-00343J | CAP DOOR-UPP,REF | 2 | RL24MBSW,ABS,-,-,- | RL26MBSW |
| | DA67-00343G | CAP-DOOR UPP,REF | 1 | BCD-246NS/231WNS,A | RL26MBSI |
| 5 | DA67-00461E | CAP DOOR | 2 | RL24MBSW,ABS,-,-,-,SC-9752 | RL26MBSW |
| | DA67-00461C | CAP-HANDLE | 2 | BCD-202NS/211NS,ABS,-,- | RL26MBSI |
| 6 | DA91-01725G | ASSY DOOR FOAM FRE | 1 | RL26MBSW,SC-9752 | RL26MBSW |
| | DA91-01725E | ASSY DOOR FOAM FRE | 1 | RL26MBSI,SILVER, | RL26MBSI |
| 7 | DA63-00510A | GASKET DOOR-FRE | 1 | PVC,500*620,WHITE, | RL26MBSW |
| | DA63-00510C | GASKET DOOR-FRE | 1 | BCD-231WNS,SOFT-PVC | RL26MBSI |
| 8 | DA67-40317B | TRAY-ICE | 1 | PP,NTR,C-PJT | |
| 9 | DA66-00115A | TRAY-EGG | 1 | PP,BCD-210N,SKY-BLUE | |
| 10 | DA63-00501B | GUARD-EGG | 2 | GPPS,BCD-210N,SILK | |
| 11 | DA63-00504B | GUARD | 1 | MSWR10,BCD-210N | |
| 12 | DA71-00229A | GUIDE-BOTTLE | 1 | PP,BCD-210N,SKY/BLUE | |
| 13 | DA63-00502B | GUARD-BOTTLE | 1 | GPPS,BCD-210N,SILK | |
| 14 | DA63-00550A | COVER-GUARD | 1 | BCD-230WN,245N,GPPS | |
| 15 | DA63-00551A | GUARD-VARIETY | 1 | BCD-230WN,245N,GPPS | |

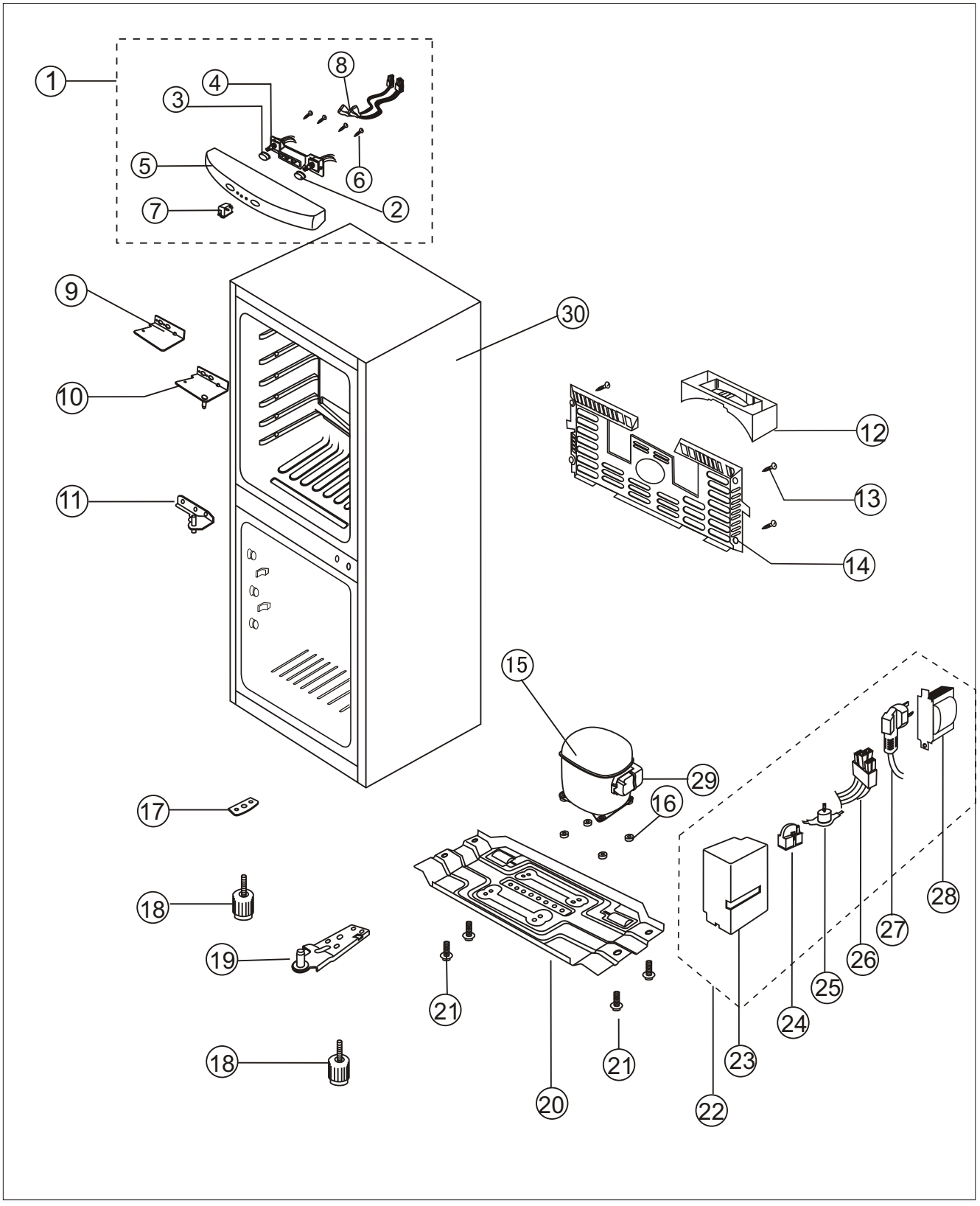
## *10-3.REF & FRE PARTS*



## 10-4. PARTS LIST-REF & FRE

| No | Part number | Description | Q'ty | Spec | Remark |
|---|---|---|---|---|---|
| 1 | DA67-00425A | ASSY SHELF | 3 | BCD-210WN, 230WN, GLASS+PP | |
| 2 | DA63-00624A | ASSY-COVER, VEGE | 1 | BCD-210WN, 230WN, CLA | |
| 3 | DA72-00307A | GUIDE-TRAY, VEG | 1 | PP, BCD-210WN | |
| 4 | DA67-00349A | CASE-VEG | 1 | GPPS, BCD-210WN, T2.7 | |
| 5 | DA97-00264D | ASSY-TRAY UPP | 2 | RL26MBSW, ENGLISH, W/O- | |
| 6 | DA97-00265D | ASSY-TRAY LOW | 1 | RL26MBSW, ENGLISH, W/O- | |
| 7 | DA02-90106K | CATALYST | 1 | W40L40T10, PD, MN, CU | |
| 8 | DA67-00335F | CASE THERMO | 1 | RL24MBSW1/BUS, ABS, -, -, - | |
| 9 | DA59-00205B | EVAP FRE-ASSY | 1 | 210WN | |
| 10 | DA71-20252A | FIXER-GROMMET D/FRE | 1 | ABS SC-900417R | |
| 11 | DA39-00074B | W/HARNESS THERMO | 1 | BCD-211W, -, -, -, -, - | |
| 12 | DA47-40121B | LAMP | 1 | E14/25*17, 240V/15W | |
| 13 | DA67-00341H | CASE PURIFIER | 1 | RL24MBSW1/BUS, ABS, -, - | |
| 14 | DA34-00012A | SWITCH-HEATER | 1 | PA66 | |
| 15 | DA47-00060C | THERMOSTAT | 1 | RL24MB, WDF29B, 220V, -, 4, - | |
| 16 | DA64-00257A | KNOB-JUNCTION | 1 | NYLON66, WHITE, BCD-190 | |
| 17 | DA63-00495A | COVER-LAMP, THERMO | 1 | MIPS, BCD-190 | |
| 18 | DA67-00335G | CASE THERMO | 1 | RL26MBSW1/BUS, ABS, -, -, - | |
| 19 | DA64-00256A | KNOB-THERMO | 1 | ABS, W9540, BCD-190 | |
| 20 | DA66-00117A | ROLLER-TRAY, OUTOR | 6 | PA66, BCD-210WN, 21 | |
| 21 | DA66-00116A | ROLLER-TRAY, INNER | 6 | PA66, BCD-210WN, 21 | |
| 22 | DA63-01027A | GUARD-WINE | 1 | NEW-COMBI, HIPS, T2, -, -, W9 | |

## *10-5. CABINENT PARTS*



## 10-6. PARTS LIST-CABINENT

| No | Part number | Description | Q'ty | Spec | Remark |
|---|---|---|---|---|---|
| 1 | DA97-01376E | ASSY COVER-TOP FRONT | 1 | RL24MBSW,ABS,- | RL26MBSW |
| | DA97-01376B | ASSY COVER-TOP FRONT | 1 | RL24MBSL,ABS,- | RL26MBSI |
| 2 | DA64-00305B | BUTTON-R | 1 | BCD-191,ABS,-,-,CR,- | |
| 3 | DA64-00304B | BUTTON-L | 1 | BCD-191,ABS,-,-,CR,- | |
| 4 | DA41-00084A | PCB-PANEL,ASSY | 1 | BCD-190 | |
| 5 | DA64-00251F | TOP TABLE-B | 1 | RL24MBSW,ABS,SC-97527,- | RL26MBSW |
| | DA64-00251E | TOP TABLE-C | 1 | RL24MBSL,ABS,SILVER,-,- | RL26MBSI |
| 6 | 6002-001106 | SCREW-TAPPING | 2 | TH,+,SJ2823-87,M3.5,L | |
| 7 | DA34-00018A | SWITCH | 2 | BCD-190 | |
| 8 | DA39-00193A | WIRE HARNESS-PCB | 1 | BCD-210W | |
| 9 | DA61-00157A | HINGE-UPP,L | 1 | SCP1,T3,BCD-210,210WN | |
| 10 | DA61-00160A | HINGE-UPP,R | 1 | SCP1,T3,BCD-210,210WN | |
| 11 | DA61-00403A | HINGE-MID | 1 | BCD-182,SCP1,4,-,-,-,-,ZP | |
| 12 | DA66-00085A | TRAY-DRAIN WATER | 1 | FOR ZEL,PP,BCD-218 | RL26MBSW |
| | DA66-00085E | TRAY DRAIN-WATER | 1 | BCD-191NS/202NS/21 | RL26MBSI |
| 13 | DA60-10130B | SCREW-TAP,TH | 5 | 1-4.2X13,FE,FZY(1018) | |
| 14 | DA63-11155B | COVER-COMP | 1 | PP,H-PJT,SH-6W-251B | RL26MBSW |
| | DA63-11155F | COVER COMP | 1 | BCD-191NS/202NS/211N,PP, | RL26MBSI |
| 15 | DA59-00203B | COMPRESSOR | 1 | QB66C,ENGLISH,220V,50HZ, | |
| 16 | DA63-00610A | GROMMET COMP | 4 | NBR,BLK,H17.5 FOR QB66 | |
| 17 | DA71-10440A | REINF-LEG,L | 1 | SCP1,T3.0,ZPC3(YEL) | |
| 18 | DA61-30105C | LEG-FRONT | 2 | ABS,V-P(NEW) | |
| 19 | DA61-00404A | HINGE-LOW | 1 | BCD-182,SCP1,3,-,ZN(YELLO | |
| 20 | DA71-00230A | CHASSIS-COMP | 1 | SBHG1,BCD-210WN,210N | |
| 21 | DA60-10124A | SCREW-TAP TITE | 4 | ZPC2-Y 6X16 SR-53EA | |
| 22 | DA97-00281D | ASSY-CASE JUNCTION | 1 | RL26MBSW1/BUS,-, | |
| 23 | DA67-10115C | CASE JUNCTION | 1 | V-PJT,-,-,-,ABS(UL94V | |
| 24 | DA35-00028A | PTC RELAY | 1 | -,FORQB66C PTH7M330MC1 | |
| 25 | DA34-00023A | O/L PROTECTOR | 1 | FOR QB66C,MM3-23GCF | |
| 26 | DA39-00071B | WIRE-HARNESS,RELAY | 1 | H-P,FOR SHUANGLO | |
| 27 | DA39-00196A | CBF | 1 | SSEC-REF,UCP2,250V/16A,2-PIN,L2 | |
| 28 | DA45-00003A | DEFROST-TIME | 1 | 220V,12H22M,CHINA | |
| 29 | DA63-00617A | COVER RELAY | 1 | NORYL,BLACK,FOR QB66C | |
| 30 | DA90-00577G | ASSY CABINET FORM | 1 | RL26MBSW,MM,SC-97 | RL26MBSW |
| | DA90-00577F | ASSY CABINET FORM | 1 | RL26MBSI,MM,SILVE | RL26MBSI |